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TELEGRAPH DEPARTMENT

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**GRAND TRUNK RAILWAY OF CANADA.
TELEGRAPH DEPARTMENT.**

RULES AND REGULATIONS

TO BE OBSERVED BY

The Operators and Station Masters

WORKING THE

TELEGRAPH LINES

OF THE

GRAND TRUNK RAILWAY COMPANY.



MONTREAL:

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RULES AND REGULATIONS
TO BE OBSERVED BY
THE OPERATORS & STATION MASTERS
WORKING THE
TELEGRAPH LINES
OF
THE GRAND TRUNK RAILWAY COMPANY.

1. Operators or Station Masters employed on the Telegraph are expected to be at their offices daily, ready for business, from 8 A.M., until dismissed for the night by the Superintendent in charge of their division. Hours of attendance.

Telegraphing Standard Time.

2. At FIVE minutes BEFORE NINE A.M. daily, each Operator must be at his instrument, and REMAIN WITH KEY CLOSED and spring WELL ADJUSTED to receive the standard time of the road. Attendance during transmission of time.

3. At THREE minutes BEFORE nine o'clock precisely, the Operator at the Head Office, will commence beating time with his key, and will CONTINUE this until NINE o'clock PRECISELY when he will say "i. i." for ONE MINUTE, and sign. Receiving of time.

4. The clocks at each station must, during this time, be carefully and EXACTLY set by the Regulating the clocks.

RULES AND REGULATIONS.

Operator, as a standard for all the employees of the Company.

Keys to be kept closed.

5. On NO CONSIDERATION is a key on the line to be opened, or a ground wire used, during the six minutes devoted to the transmission of time.

Interruptions and Repairs.

Interruptions occurring in the night.

6. In case of an interruption of the circuit from any unknown cause continuing for fifteen minutes after the hour for commencing the business of the day (8 A.M.), the Operator will at once send out the foreman of the nearest gang of trackmen to repair it — first satisfying himself, by a careful examination, that the cause of the interruption *is not in or about his own station.*

Interruptions during the day.

7. If an interruption takes place **THROUGH THE DAY**, and continues half an hour, the same examination must be made, and the repairers sent out at once. Should the interruption take place **AFTER DARK**, the trackmen must be notified the **SAME EVENING**, and ordered to go over the line at **DAYBREAK**, until they come to the place of interruption, or **MEET THE NEXT GANG OF TRACKMEN.**

Sleet storms.

8. In cases of interruption by **SLEET STORMS** or severe gales, the repairers must be ordered to go over the **WHOLE OF THEIR DIVISION**, and until the next gang of trackmen are found,—taking with them a good supply of wire. Operators must not only **NOTIFY** trackmen of breaks or interruptions, but must **SEE** that they **START PROMPTLY**, and take all steps necessary to in-

Must see that repairers start promptly.

sure a speedy removal of the interruption, reporting to the Superintendent any neglect on the part of the repairers, stating NAME and SECTION.

9. Whenever the two wires are **CROSSED**,^{When wires are crossed.} Operators **EACH** side of, and **NEAREST** the *cross*, must send out the repairers at once, explaining to them the nature of the interruption.

10. The particulars of all repairs made, and interruptions occurring on the line, must be obtained from the trackmen or repairers, and briefly telegraphed to the Superintendent by the Operator.^{Reporting repairs made.}

11. Whenever the line is interrupted on **SATURDAY NIGHT** at the time offices are closed,^{Interruptions occurring on Saturday nights.} the repairers must be notified **AT ONCE**, and all the Operators must be at their offices at **NINE o'clock SUNDAY MORNING**, to test the line. If not *then* in working order, notice must be given to the repairers, and all necessary steps taken to remove the interruption. At **FOUR P.M.** the line must **AGAIN** be tested by the Operators each side and nearest the break.

Sending, Receiving and Delivering Messages.

12. Messages must be read over **WHEN RECEIVED FOR TRANSMISSION**, and the Operator^{Reading messages when handed in.} must be sure of the exact wording, and completeness of the address and signature.

13. No abbreviations are to be used in transmitting messages;—**EVERY WORD** must be^{Abbreviating words in messages.} written out **IN FULL**, and **EXACTLY ACCORDING TO COPY.**

Figures in messages.

14. Figures **ALONE** must not be allowed in the body of a dispatch. Where numbers or prices occur, they must **FIRST** be sent in words, and then **REPEATED** in figures,—thus, *five hundred, 500.*

Important parts of communication.

15. Where any word or important part of a message is liable to be misunderstood, such word or words must be **REPEATED** immediately after the signature.

Counting words in communications.

16. **BEFORE** sending a message, the exact number of words therein, (exclusive of address and signature), must be ascertained, noted at the bottom, and transmitted after the signature, the receiving Operator **CAREFULLY CHECKING THE SAME.** When a **DIFFERENCE** exists between the number of words **RECEIVED** and the the number **NOTED**, the message must be repeated. To insure accuracy, the words of every dispatch should be **TWICE** counted.

Messages to be completed before sending them.

17. No Operator is allowed to commence sending a message until the same is fully written out, **SIGNED** and the words **COUNTED.**

Verbal messages.

18. Operators are forbidden to transmit messages **GIVEN TO THEM VERBALLY**, or without a genuine signature.

Taking messages by sound.

19. The taking of messages by **SOUND ALONE** is prohibited. In *all* cases the register paper must be allowed to run, and the communication when copied, compared therewith. The receiving Operator will be held responsible for errors, unless, *by producing the register paper*, he can show that the blame rests with the transmitting Operator.

20. Communications received must be read ^{Copying mes-}
over *twice* from the instrument paper, carefully sages.
copied in a neat and legible manner, and
promptly delivered to the proper address.

21. When the party addressed cannot be ^{Delivering mes-}
found, the circumstance must be intimated at sages.
once to the sender. If it is found that the per-
son addressed is on any train, the dispatch
must be transmitted to the next station at
which such train will stop. A copy must,
however, be *also left at his ordinary place of*
business.

22. In the event of an accident occurring on ^{Accidents on the}
the road, it is to be kept **STRICTLY SECRET**—no road.
version or account thereof is to be telegraphed
but what is signed by one of the Company's
agents, and given to the Operator for trans-
mission. No mention of the circumstance is
to be made on the line **BETWEEN OPERATORS** ;
and **ALL** who observe such dispatches passing,
are enjoined to keep **STRICT SILENCE** on the
subject. Operators receiving such messages,
must deliver them **IN ENVELOPES**, and use
EVERY precaution to keep the matter private,
until the managers of the Company's affairs
see fit to make it public.

23. Communications regulating the move-
ments of trains must be transmitted with ^{Communications}
MORE regulating the
THAN ORDINARY CARE, and copied by the re- running of trains
ceiving Operator in the plainest manner. On
receipt of such messages, they must be **RE-**
PEATED BACK to the sending office, so that per-
fect correctness may be insured. Operators
are enjoined to refuse to transmit messages of

this description, unless the copy furnished be fairly written and otherwise in conformity with these rules.

NOTE.—Station-masters and others, *before acting on telegraphic messages* regulating the running of trains, should always intimate to the sender of the message the *construction* which *they* [the recipients] put upon it, and await an intimation that they have understood it *properly*.

Reporting Trains.

Reports to be furnished by station-masters.

24. Reports of the departure of trains must be written out in full, and signed by the Station-master, the original copy to be kept in the custody of the Operator.

Up trains.

25. When an up-train is to be reported, the Operator will **TWICE** call "U.X." **THREE TIMES**, signing **BOTH** times, and then proceed with the report.

Down trains.

26. For down trains the call "D.X." is to be used instead of "U.X.", in the *same* manner.

Reports of trains

27. When the calls "D.X." or "U.X." are heard on the line, each Operator will take the report that follows, and deliver it to the Station-master without fail. At head quarters the Operator will deliver it to the Superintendent of the road.

Night reports of trains.

28. Reports of trains must be sent as quickly as possible after receipt, and **DURING THE NIGHT must be answered by all the NIGHT OPERATORS** by "O.K." and signature.

Signals.

Signal "23."

29. The signal "23" intimates that a message for **ALL** the stations is to follow.

30. When a CIRCULAR or "23" message is ^{General call X.} to be sent, "X" will be used as a GENERAL CALL, and all the offices are to answer to it, commencing with the most distant. The same order must be observed in acknowledging the message by "O.K." and signing.

31. All circulars and "23" communications ^{Circulars to be filed.} must be carefully filed, and kept in the office for reference.

32. The signal "17," called by an office, ^{Signal "17."} signifies a communication requiring GREAT HASTE and of the UTMOST importance. When used ALL other offices must CEASE WORKING, and close circuit until the communication is sent and ACKNOWLEDGED.

33. Operators are forbidden to make use of ^{Signal "17" to be used only in emergencies.} signal "17," excepting for the purpose of stopping or dispatching a train—preventing an accident, or for some other object of undoubted importance.

Main Batteries.

34. Main Batteries must be kept constantly ^{Batteries.} clean and bright. The holes in the leaders must be kept always clean, as also the ends of the wires which enter them.

35. Battery supplies will be furnished on ^{Battery supplies} application to the Superintendent. Operators in charge of stations must see that great care is exercised in the use of these supplies, (particularly mercury, nitric acid, and platina,) and that there is always a sufficient quantity on hand.

36. Where GROVE's batteries are used, and ^{Night batteries.}

are kept on night and day, they must be carefully cleaned once a-day, *at an hour when they may be most conveniently spared.*

Instruments and Wires.

37. When at meal times an Operator is obliged to leave his office, he must first **CONNECT THE MAIN WIRES** in such a way as to throw his key **OUT OF CIRCUIT**, and remove all danger of its causing interruption, should it, by accident or otherwise, be opened in his absence.

Magnets during
thunder storms.

38. **EVERY NIGHT**, ere closing office, and **DURING THUNDER STORMS**, the main wires must be pulled **COMPLETELY OUT** of the thumb screws of the relay magnet, and be *connected across* to prevent the instrument from being spoiled by lightning. It is not sufficient merely to connect these wires across by a wire from the thumbscrews—they must be **ENTIRELY DETACHED** from the **MAGNET**.

Registers.

39. Registers must be kept **CLEAN** and always in **GOOD RUNNING ORDER**.

Ground wires.

40. Ground-wires at intermediate stations are to be used as **SELDOM AS POSSIBLE**, and **NEVER** except to detect the direction of an interruption, or to expedite business.

41. Operators are not allowed to alter in **ANY WAY** the arrangement of the line, instruments, wires or fixtures at their stations, without **SPECIAL PERMISSION** from the Superintendent.

Stationery Supplies.

Stationery.

42. Supplies of stationery will be furnished

to the offices on a requisition for the same being made to the Superintendent.

43. On receipt of supplies the printed requisition accompanying them must be receipted and returned. Receipting supplies.

44. The **STRICTEST** economy must be observed in the use of stationery. Operators are forbidden to allow **INSIDE BLANKS** to be used for writing messages on for **TRANSMISSION**. Inside blanks.

45. Envelopes are not to be used where the communications can be personally handed by the OPERATOR to the individual addressed. Envelopes.

46. Where practicable, **ALL** the reports of trains for the **SAME DAY** must be written on **ONE** and the same blank. Writing reports of trains.

47. The register paper must not be allowed to run **UNNECESSARILY**, and the lines must be run as closely as possible to prevent waste.

General Rules.

48. The transmission of messages not on the business of the Railway Company is prohibited.

49. All communications passing over the line are **STRICTLY PRIVATE** and confidential. Any Operator divulging the contents of a telegram will be dismissed. Messages private.

50. On no account will the practice of delivering messages **VERBALLY** be tolerated. Verbal messages.

51. The *originals* of all messages must be neatly filed *each day*, with the date written on the band; and be preserved in the office from which they are transmitted. Filing communications.

Timing messages.

52. When a report of a train, or any other communication, is sent, the operator must *mark thereon the exact hour and minute* at which it was dispatched.

Purchasing supplies.

53. No Operator has authority to purchase any article for the telegraph, except in cases of emergency.

Meal hours.

54. Where there are two or more Operators in an office, one must remain on duty while the others are at meals; and the office during business hours must never be left unattended.

Night Operators.

55. Where night and day operators are kept, the DAY operator will have charge of the office, and will be held responsible for every thing belonging thereto.

Keeping circuit closed.

56. The circuit must not be allowed to remain open for *any purpose whatever*.

Main batteries on Sundays.

57. Main Batteries must be kept on during Sundays, although on that day the line will be closed, excepting in cases of emergency.

Offices to be kept private.

58. The Telegraph Offices must be kept strictly private, and no idlers or loungers allowed therein.

Keeping offices neat.

59. Offices, instruments, batteries, and all things connected therewith, must be kept clean and neat, always in order, and fit for business.

Inside blanks.

60. Operators are not to allow *inside blanks* to be taken out of the office on *any pretence whatever*.

61. Struggling for circuit is strictly forbidden.

62. No profane language is allowed on the line Chatting, &c. AT ANY TIME, nor unnecessary conversation during business hours.

63. Operators must be in their offices when On arrival of trains. trains arrive, so that parties on the train, who may wish to communicate, may do so without delay.

64. Operators are not permitted to exchange Exchanging places. places with each other, nor to leave their stations at all, without permission of the Superintendent. Applications for leave of absence will not be granted during the busy season.

65. Operators neglecting these rules will be dismissed.

66. Station-masters and clerks acting as Station-masters and clerks. Operators, disregarding these rules will be reported to the General Manager.

GEO. W. PURKIS,

Superintendent of Telegraphs, G. T. Railway.

NOTE.—Operators may with great safety rely upon being ultimately appointed Station Agents, if, by *continued attention, good conduct, etc.*, they prove their fitness for the situation.

EXTRACT

FROM THE "BOOK OF GENERAL REGULATIONS," PAGE 28.

Every Station-master or clerk, where a telegraph instrument is placed, must make himself proficient as an *Operator*, and obey any instructions relating thereto he may receive from the telegraph superintendent.

(Signed)

S. P. BIDDER,
General Manager.

A. M. ROSS,
Chief Engineer.

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### NUMERAL SIGNALS

USED ON THE TELEGRAPH LINES OF THE GRAND TRUNK  
RAILWAY COMPANY.

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1. Wait a moment.
  2. What time is it?
  3. Please get answer from.....
  4. Where shall I resume?
  5. I do not know.
  6. I am ready—proceed.
  7. The following is strictly private.
  8. The other line is occupied.
  9. Deliver immediately, or, get an answer at once.
  10. Keep your key closed if you please.
  11. Did you get my last communication?
  12. I do not understand your last.

13. Repeat the communication just sent you.
14. Have you a report of.....train?
15. ....train has not arrived yet.
16. What is the weather there?
17. A communication of the highest importance—drop all other business, and attend to it.
18. What is the matter?
19. I am going to send a *through* message.
20. I will enquire. I will try.
21. I am going out to deliver a message.
22. Connect me with the other line.
23. A communication for all the offices—all answer.
24. Have you anything to send me?
25. Write dots. Write the alphabet.
26. Put on Ground-wire.
27. Take off Ground-wire.
28. Do you get what I am sending?
29. Please write firmly and distinctly.
30. The end.
31. Please send for.....to come to your office.
32. Where is.....to be found?
33. The following message will be called for.

N.B.—No signals or abbreviations are to be used in the body of a message.



## DIRECTIONS

### FOR USING CHESTER'S LOCAL BATTERY.

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Amalgamate the zincs—for though they will work without amalgamation, yet, by so doing, they last longer. Place the copper in tumbler; porous cup in copper; zinc in porous cup. Fill the little cell attached to the copper with sulphate of copper (or blue vitriol) pounded fine. Fill porous cup with hot water, to within half an inch of top, and the tumbler to within an inch of top of porous cup; then add ten drops of sulphuric acid to water in tumbler, and as fast as sulphate of copper dissolves, put in fresh. As soon as the solution is saturated, “the battery will go off;” but if it is slow or weak, pour ten drops acid into porous cups (better not do this unless necessary.)

BE VERY CAREFUL not to let any of the vitriol solution, or blue salt get into the porous cup. If the vitriol solution should rise, so as to threaten such a result, draw off enough to prevent it. To form connection in the battery, screw the brass clamp attached to the copper of one battery to the zinc of the next, and be careful not to let the brass touch anything but the zinc. The third zinc has an independent screw clamp to fasten to it. To renew the battery, when weak, wash the porous cups out clean, scrape off the thick scales adhering to the zincs—thoroughly wash them, and replace the porous cups and zincs, filled as before with clean warm water. After the first charge, use neither acid nor mercury.

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## DIRECTIONS

### FOR USING CHESTER'S IMPROVED MAIN BATTERY.

1. Wipe out glasses.

2. Cover the bottom of salt cellers with mercury, and place them in bottom of Glass as in *Fig. 1*.

3. Fill glasses with water, to one quarter inch of wooden guage, as in *Fig. 2*, and pour in two and one half ounces of pure sulphuric acid, stirring it up well.

4. Place the glasses on shelving, which should be six inches wide, long enough to allow two feet for every five cups, and of a convenient height from the floor. If more than one shelf is used, they should be twelve inches apart, and the support to the shelves twenty three inches apart in the clear. The glasses should be placed in series of five, leaving about one quarter inch between them, which would bring the shelf supports between each series.

5. Place the sticks on glasses, so that labels can be read, as in *Fig. 3*, the taller glasses at each end of the series, that the sticks may rest on them, and not on the middle ones.

6. Screw the zinc plates into the metallic clamps, letting them dip in mercury, but not touching the bottom of the salts, and lastly screw in the platina plates, the exposed brass surface facing the screw. Connections to be made to suit the shelves.

7. To renew, draw off with syphon, about one-third of solution from bottom of glass, and replace with fresh, of a strength: one sulphuric acid, and eleven water, always filling up to wooden guage, also brush, or if necessary, amalgamate the zines. This is most easily done by throwing five cups at a time out of the circuit, by means of the double clamp and wire, that accompanies the batteries. Screwing one end, for example, on the thumbscrew of cell No. 5, and the other end on that of No. 11. Then the intermediate cups are thrown out of main circuit,

and one of their zincs should be instantly disconnected. In this operation the circuit is not broken for an instant. In amalgamating, only strong solution of sulphuric acid and water should be used, never muriatic acid.

8. The frequency of renewal, will depend upon the use given to battery, once in fifteen days, is the general average on Morse's Lines, and its necessity will always be discovered, by a weak current, and the formation of salt on zinc plates just above solution.

*If battery No. 2 be used, the directions will be slightly amended.*

1. Place salts in glasses as in *Fig. 4*.
2. Let supports for shelves be separated in the clear, twenty-two inches.
3. Screw iron bracket against these supports, so that they will just clear the glasses, and the sticks resting on them will hang over the glasses as in *Fig. 5*.
4. The zincs may be allowed to rest on the bottom of the salts.

#### REMARKS.

1. Zincs when new, should always be amalgamated before using, those sent with the battery are always amalgamated. Sometimes their first coating will last two weeks. It is best to watch them carefully during the first week of their use, and if any blacking or signs of much corrosion appear on any one, take it out at once and give it a new coating. The better the zincs are kept clean, the longer will the solution last.

2. The solution is drawn by the syphon from the *bottom* of the glasses, because the used-up acid sinks.

3. A hissing in one or more cups, shows that some wrong connection exists. This should be searched for and remedied.

4. Through carelessness, neglect, or accident, the free acid in a cell may be all used up and the solution become sulphate of zinc. Zinc will be deposited upon and injure the platina plate. It can easily be detected—put in a new platina plate and fresh solution.

5. The hands need not be wetted in cleaning and removing the zines, since only that part of the zinc that dips in the solution needs brushing. Keep the other part dry.

6. *Cautions.*—The clamps, brasses, screws, and wood work should be kept dry. They will remain bright and clean if handled carefully. Do not allow any bits of metal or any kinds of salt, or any other acid than sulphuric, to get into the solution. Do not put up the battery where it will be exposed to the fumes of Grove's battery or nitric acid. Do not allow the zinc plates to touch or fall against the platina plates. Do not get mercury upon the platina plates.